AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method comprising:

modeling neural activity as [[a]] single equivalent current dipoles (ECD's) ~~dipole (ECD)~~;

calculating a best fit dipole coordinate for each dipole;

computing a confidence interval for each ~~the~~ dipole coordinate; and

displaying the confidence intervals ~~interval~~ in an overlay on a three-dimensional image obtained through the use of either magnetic resonance imaging (MRI) or computerized tomography (CT).

2. (currently amended) The method of claim 1, wherein the step of computing a confidence interval includes computing an error ellipsoid using a Singular Value Decomposition.

3. (canceled)

4. (previously presented) The method of claim 1, wherein the step of modeling includes assuming the geometric and conductive properties of cardiac or cortical tissue.

5. (currently amended) The method of claim 4, wherein the step of computing a confidence interval includes the step of determining field distributions for a best fit dipole coordinate and for a modified best fit dipole coordinate.

6. (previously presented) The method of claim 5, wherein the step of computing a confidence interval includes the step of computing the difference field distribution.

7. (previously presented) The method of claim 6, wherein the step of computing a confidence interval includes the step of performing a signal to noise ratio analysis.

8. (previously presented) The method of claim 1, and further comprising defining a Cartesian coordinate system.

9. (canceled)

10. (canceled)

11. (currently amended) An apparatus comprising:

a detector;

a processor adapted to receive data from the detector, the processor capable of using the data to calculate a best dipole coordinate and a confidence interval; ~~and~~

an imaging source in communication with the processor; and

a display in communication with the processor and adapted to display the confidence interval in three dimensions relative to a three-dimensional anatomical image, wherein the three-dimensional anatomical image is obtained through the use of the imaging source.

12. (canceled)

13. (currently amended) The apparatus of claim 11 ~~12~~, wherein the imaging source is an MRI unit.

14. (currently amended) The apparatus of claim 11 ~~12~~, wherein the imaging source is a CT unit ~~scan~~.

15. (currently amended) The apparatus of claim 11 ~~12~~, wherein the detector comprises ~~is an~~ electroencephalogram sensors.

16. (currently amended) The apparatus of claim 11 ~~12~~, wherein the detector comprises ~~is a~~ magnetoencephalogram sensors.

17. (currently amended) A method comprising:

measuring a plurality of ~~an~~ electrical or magnetic signals ~~signal~~;

calculating a best fit dipole coordinate for each ~~the~~ signal;

computing a confidence interval for each ~~the~~ dipole coordinate; and

displaying the confidence interval on a three-dimensional ~~an~~ anatomical map, wherein the confidence interval is displayed in its anatomical position in three dimensions.

18. (previously presented) The method of claim 17, wherein the step of computing a confidence interval includes computing a confidence ellipsoid axes from estimated noise level and different fields strengths.

19. (previously presented) The method of claim 17, wherein the step of displaying includes the step of receiving a digital image.

20. (previously presented) The method of claim 17, wherein the step of computing a confidence interval includes the step of computing a confidence volume.

21. (new) The apparatus of claim 13, wherein the detector comprises electroencephalogram sensors.

22. (new) The apparatus of claim 14, wherein the detector comprises electroencephalogram sensors.